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Occultation of γ_1 and γ_2 Virginis. By the Rev. A. Freeman.

The disappearances of these stars took place January 19, 1892, a little east of the south point of the bright limb of the Moon. The star γ_1 *Virginis* disappeared at $16^h\ 2^m\ 53^s{\cdot}8$, G.M.T., the star γ_2 at $16^h\ 3^m\ 12^s{\cdot}3$. Dense cloud unfortunately prevented the observation of the reappearances at the dark limb about one hour later. I employed a 6½-inch O.G. with a power of 90. Each star took from 2·5 to 3 seconds, after projection within the limb of the Moon as a bright round point, before it finally disappeared; a separate less bright segment of a star was in each case seen just outside the limb. The times recorded refer to the disappearances of these segments, which were simultaneous with those of the projected stars. I consider that, in this case, the apparent effect of projection was due to the fact that perfect achromatism is impossible with an object-glass composed of two lenses only. The principal rays of light collected by the object-glass in a common focus give the bright star image as seen apparently within the limb, but the apparent diameter of the Moon is enlarged by imperfect achromatism, and the segments of stars are parts of uncorrected images out of focus. The line joining the two stars seemed to the eye inclined about 25° from the normal to the Moon's limb, γ_2 being east of the normal at the disappearance of γ_1. From the Greenwich Ten-Year Catalogue for 1880 I find the mean places of the stars for 1892·0 would be:—

		h	m	s		°	′	″
γ_1 Virg.	R.A.	12	36	11·122,	S.D.	0	51	22·73
γ_2 Virg.	R.A.	12	36	11·296,	S.D.	0	51	28·10

Annual precession, secular variation, and proper motion are the same for both stars. Hence the position angle of γ_2, referred to γ_1, would seem to be 154° 4′·75, and its distance 5″·97. I judged γ_1 to be the brighter of the two stars. The approximate position of my observatory is in lat. 51° 20′ N., long. $3^m\ 0^s$ E.

Murston Rectory, Sittingbourne:
1892 *March* 7.

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The Reappearance of Saturn's Rings. By George C. Comstock.

(*Communicated by H. H. Turner, M.A., B.Sc.*)

The communication respecting the reappearance of *Saturn's* rings made to the Royal Astronomical Society by the Rev. A. Freeman, M.A., and published in the *Monthly Notices* for November 1891, makes it proper that I should publish through the same channel the results of observations of *Saturn* made at this observatory, although a brief account of some of them has already appeared in the *Sidereal Messenger* for November.

At my request Mr. S. D. Townley, assistant in the observatory, commenced about the middle of October an examination of *Saturn* on every clear morning, using the Clark equatoreal of 40 cm. aperture with the so-called zone eyepiece, giving a power of 145 diameters. On a few mornings I myself took part in the observations, which is indicated in the following extracts from Mr. Townley's note-book, by the letter *C*, prefixed to those parts of the observing for which I am personally responsible. The remaining, and by far the greater number of, observations are by Mr. Townley. The times are given in mean solar time of the meridian 90° west of Greenwich, and the dates in civil reckoning.

1891 October 16.—Rings not visible. The shadow of the rings on the ball is seen plainly. Also belts on each side and parallel to the shadow; south belt plainer. The shadow of the rings appears to divide the ball into two unequal parts, of which the southern (?) part is the larger. Seeing good. *C*. confirms the above description.

October 20, 4^h 50^m.—Rings not visible, but seeing is not very good. 5^h 24^m. Seeing better than before. Rings visible, but most plainly in preceding limb. *C*. Mr. Townley called me to the telescope, saying that he could see the rings. The ansæ are visible with difficulty, but certainly on both sides of the planet; more plainly on the pr. side. Ansæ project beyond the ball—two-thirds of the diameter of the planet.

At 5^h 45^m made sketch of *Saturn* with power of 310 diameters, with approximate location of the satellites visible near the ball. These were subsequently identified from Marth's ephemeris. At the time of the sketch, Rhea could just be distinguished at its reappearance from behind the ball of the planet. A measurement from the sketch places it $4''\cdot1$ south of the planet's equator at the time of reappearance.

October 22, 4^h 30^m.—Rings not visible. Seeing very bad. 4^h 50^m. Seeing is not much improved. Thought once that I caught a glimpse of the rings on the following side. 5^h 30^m. No rings visible, but daylight too far advanced for the best seeing. *C*. No rings visible at 4^h 45^m and 5^h 55^m.

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